

CLAIMS

1. An evaporator comprising a heat exchange core having a plurality of flat refrigerant passing bodies arranged in parallel at a spacing with their widths oriented in a front-rear direction and first corrugated fins arranged between respective adjacent pairs of refrigerant passing bodies, and a refrigerant inlet header and a refrigerant outlet header arranged on the upper side of the heat exchange core side by side in the front-rear direction and each having at least one end positioned at a widthwise outer end of the heat exchange core, the inlet header having a refrigerant inlet at said one end thereof positioned at the widthwise outer end of the heat exchange core, the outlet header having a refrigerant outlet at said one end alongside the inlet, a second fin being disposed outside the refrigerant passing body positioned at said widthwise outer end of the heat exchange core, a side plate being disposed externally of the second fin, the evaporator being so adapted that a refrigerant flows into the inlet header through the inlet, returns to the outlet header after flowing through all the refrigerant passing bodies and is sent out from the outlet,

the second fin and the side plate having respective upper ends so positioned as to permit an upper portion outer surface of the core-end refrigerant passing body to be exposed, a refrigerant inflow member and a refrigerant outflow member being arranged on the core-end refrigerant passing body at an external portion thereof above the second fin and the side plate, the inflow member being connected to the inlet of the

inlet header, the outflow member being connected to the outlet of the outlet header, the inflow member and the outflow member having respective outer side faces positioned laterally externally of the heat exchange core and positioned within
5 an upward extension of the plane of an outer side face of the side plate or inwardly of the extension.

2. An evaporator according to claim 1 wherein the inflow member and the outflow member each comprise a tube which is open at one end and closed at the other end and has a pipe
10 joint opening at the open end, and the inflow member and the outflow member are connected, each at a peripheral wall portion thereof toward the closed end, to the inlet of the inlet header and the outlet of the outlet header respectively.

3. An evaporator according to claim 1 wherein an outwardly
15 projecting flange is formed around each of the inlet of the inlet header and the outlet of the outlet header, and the inflow member and the outflow member are joined respectively to the inlet header and the outlet header with the flange fitted in a through hole formed in a peripheral wall of each of the inflow
20 member and the outflow member.

4. An evaporator according to claim 3 wherein the inlet of the inlet header and the outlet of the outlet header are each oblong, and the through hole formed in the peripheral wall of each of the inflow member and the outflow member is
25 an oblong hole for the flange around each of the inlet and the outlet to fit in.

5. An evaporator according to claim 1 wherein one of the inflow member and the outflow member which is positioned in

front of the other extends forward from a closed end thereof, and the other member extends forward from a closed end thereof as bent to clear said one member in front.

6. An evaporator according to claim 1 wherein one of the inflow member and the outflow member which is positioned in front of the other extends forward straight from a closed end thereof, and the other member is curved downwardly forward from a closed end thereof and has an outer end extending straight forward.

7. An evaporator according to claim 1 wherein the side plate is provided at the upper end thereof with a portion bent toward the refrigerant passing body, and the inflow member and the outflow member are rectangular in cross section and have their outer side faces positioned within the upward extension of the plane of the outer side face of the side plate, a covering member being provided for closing a space between the upper-end bent portion of the side plate and a lower end of one of the inflow member and the outflow member which is positioned in the rear of the other when the space is seen from the front.

8. An evaporator according to claim 7 wherein the side plate has an upward bent portion integral with a free end of the bent portion, and the covering member is provided integrally with at least one of front and rear side edges of the upward bent portion.

9. An evaporator according to claim 1 which comprises a plurality of flat hollow bodies each comprising two vertically elongated rectangular plates brazed to each other along

peripheral edges thereof and having bulging refrigerant passageway portions and bulging header forming portions continuous with opposite ends of the passageway portions of the plates, the flat hollow bodies being arranged side by side
5 with opposed outer faces of corresponding header forming portions in contact with each other, the corresponding header forming portions of each adjacent pair of flat hollow bodies being joined to each other at their outer faces, the refrigerant passing bodies of the heat exchange core being provided by
10 the passageway portions of the flat hollow bodies.

10. An evaporator according to claim 9 wherein the plurality of flat hollow bodies are arranged in succession from the widthwise outer end of the heat exchange core and have bulging header forming portions providing the inlet header and the
15 outlet header.

11. An evaporator according to claim 1 wherein each of the refrigerant passing bodies of the heat exchange core comprises a tube having a plurality of parallel refrigerant channels.

20 12. An evaporator according to claim 11 which comprises a plurality of intermediate headers in addition to the inlet header and the outlet header, and two tube groups each comprising refrigerant passing bodies arranged at a spacing in at least one row are arranged respectively between the inlet header
25 and one of the intermediate headers opposed thereto and between the outlet header and another one of the intermediate headers opposed thereto, the refrigerant passing bodies of each of the tube groups having opposite ends joined to the respective

corresponding headers opposed to each other.

13. An evaporator according to claim 12 wherein the inlet header and the outlet header are provided by dividing interior of a refrigerant inlet-outlet tank into front and rear two
5 portions by a partition wall.

14. An evaporator according to claim 13 wherein the inlet-outlet tank comprises a first member having the refrigerant passing bodies joined thereto, a second member brazed to the first member at a portion thereof opposite to
10 the refrigerant passing bodies, and caps brazed to respective opposite ends of the first and second members, the partition wall being integral with the second member, one of the caps being provided with the inlet and the outlet.

15. A refrigeration cycle comprising a compressor, a
15 condenser and an evaporator, the evaporator being an evaporator according to any one of claims 1 to 14.

16. A vehicle having installed therein a refrigeration cycle according to claim 15 as an air conditioner.